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ABSTRACT

The purpose of the study was to consider the viability of expanding the medical school within existing resources such as personnel, hospitals and clinics, in North Dakota. Questionnaires were used to obtain information about existing health education programs, the facilities for training physicians, and the willingness of area physicians to teach medical students, and also to discover the response of medical schools across the country to the possibility of entering into a contractual arrangement to assume third year entry for two year North Dakota medical school graduates. Sections outline the calendar of study procedures, Allied Health Training in North Dakota, U.N.D. School of Basic Medical Sciences, medical resources in North Dakota, alternatives for action and opportunities for funding. Four alternatives for action are discussed in the light of the findings of the study. (Relevant tabulated data and a 32 item listing of references are included.) (KP)

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NORTH DAKOTA HEALTH MANPOWER

REPORT OF A STUDY PREPARED FOR THE

NORTH DAKOTA MEDICAL ASSOCIATION

BY: GARY F. DUNN, M.A.

CE 000 682

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INTRODUCTION

The Flexner report published in 1910 established a pattern for medical education which continues to prevail. However, in recent years there have been a multiplicity of suggestions from many sources for change in the manner in which physicians and other health care professionals are educated to provide all the services that people expect to receive.

North Dakota now has an excellent two-year basic science medical school and a number of good educational programs in various institutions for training allied health care professionals. Among the many changes in the educational process now being carried out or proposed throughout the country, there is an almost universal trend towards providing clinical training at an earlier and earlier stage in the medical student's curriculum. Additionally, a number of studies, notably the report by the Carnegie Commission on Higher Education, suggest that existing two-year schools develop into degree granting institutions or be discontinued.

Recognizing the climate of change, the faculty of the North Dakota School of Medicine sought the advice of the North Dakota Medical Association leadership and other physicians. They were in general agreement that a complete survey should be carried out as soon as possible. It was generally agreed that the major emphasis of the survey would be to consider the future of the School of Medicine.

The North Dakota Medical Research Foundation is a non-profit foundation sponsored by the North Dakota Medical Association. The Board of Directors are identical with the Council of the State Medical Association. Currently, NDMRF is the sponsoring agency for the Regional Medical Program and provides assistance to the MECO and MEDEX Programs.

The Board of Directors appointed Willard Wright, M.D., as Executive Director of NDMRF and employed Gary Dunn, M.A., currently Assistant Dean, University of Alabama, to be Research Director.

CALENDAR OF STUDY PROCEDURE

The study began in September, 1971, and almost immediately attempts were made to communicate the purpose and findings of the study to various groups both within North Dakota and outside the state. These meetings were designed for two-way communication, giving state residents a chance to ask questions about, and react to, the study. The research director, members of the medical school faculty and members of the Regional Medical Program have met with and discussed this study with individual physicians, groups of physicians, district medical societies, allied health professionals and other individuals and groups who have an interest. Some of these are:

Council of the State Medical Association
Minot area medical society
Dickinson area medical society
Williston area medical society
Devils Lake area medical society
Fargo medical society

Meetings with other societies are also planned. Mr. Dunn visited the following clinics in the major cities of the state to explain the study and audit their facilities:

Fargo Clinic
Quain and Ramstad Clinic
Grand Forks Clinic
Dakota Clinic, Fargo

Phase I of the study, the assessment of health manpower in North Dakota, was completed on November 19. The next portion of the study concentrated on the training of health care workers in the state. In order to find out more about health education programs, facilities for training physicians and willingness of area physicians to teach medical students, questionnaires were went to the following groups:

North Dakota health training programs
North Dakota clinics
North Dakota physicians

During Phase I and after its completion, reports were given to the following decision-making groups:

Medical Center Advisory Council
Advisory Group of prominent citizens
Board of Directors NDMRF
Board of Higher Education
Council of the State Medical Association
Legislative Research Council Committee on Health Affairs

Beginning with an October meeting with President L. O. Loftsgard of North Dakota State University a continuing dialogue was maintained with the University through subsequent visits and telephone calls.

Mr. Dunn visited representatives of the following out-of-state groups to discuss the study and North Dakota's health care situation:

University of Minnesota New School at Duluth
A.A.M.C., Washington, D.C.
Mayo Clinic New School in Rochester
University of Minnesota Medical School
University of South Dakota Medical School
University of Washington
South Dakota Legislators
Montana Medical Centers

A questionnaire was sent on February 2, 1972 to all accredited medical schools in the United States asking them to respond to the idea of entering into a contractual arrangement to assure third year seats for U.N.D. Medical School graduates in degree granting institutions.

The final report of the study will be presented to the Board of Directors of the North Dakota Medical Research Foundation on March 24. The conclusions and recommendations of the council will go to the House of Delegates of the North Dakota Medical Association on May 4, 1972.

ALLIED HEALTH TRAINING IN NORTH DAKOTA

Phase I of this study provided an assessment of existing health manpower personnel and a projection of state nursing and allied health needs based on national projections. Sources of national estimates of manpower requirements which were used as the basis for this phase of the study were; (1) assembled professional judgments, (2) a computation of the manpower required to provide in each of the four Census regions of the United States the manpower available in the region with the highest rate of utilization, (3) manpower projections by the Bureau of Labor Statistics, and (4) needs for additional manpower as reported in a 1966 survey of hospitals. A survey of employment opportunities in North Dakota hospitals showed that needs are presently being met in most health care professions.[1]

North Dakota's health care situation is consistent with the national health manpower scene; there is a shortage of L.P.N.'s and of physicians. In addition, it is evident that the maldistribution of physicians within North Dakota heightens the problem of health care delivery.

It was the original intention of the Medical Society to study in depth the total health science training effort in North Dakota. However, because of limited resources and because it was discovered by the study group that a great deal of significant work had been done and was under way in the field of nursing and allied health, it was decided that the study should concern itself mainly with medical education. Health manpower training programs in North Dakota, already effectively identified as to number and type, were surveyed for additional information about their students, graduates and future plans.

Health manpower training programs on the professional level are present in North Dakota in all the major health services except medical records. Sixty-one programs train workers for twenty-one health occupations.[3]

A comparison of nursing services shows the state has a higher rate of registered nurses per 100,000 population than most of the nation. There is a pronounced need however, for L.P.N.'s. Last year 289 R.N.'s and 375 L.P.N.'s graduated from nursing programs in North Dakota. If past trends continue, one may assume that the majority of graduating registered nurses will seek employment outside the state, while most of the L.P.N.'s will remain in North Dakota.[6]

The ratio of pharmacists per population within North Dakota is lower than the national ratio.[4] However, only a slight need for pharmacists is indicated nationally. The state shortage seems to be a result of out-migration rather than opportunity for training. The School of Pharmacy at North Dakota State University, the only program in the state, reports that ninety-one students graduated in pharmacy last year. The school estimates that North Dakota retains 40% of its graduates to practice pharmacy in the state.[6]

Based on the estimated staff needed to give optimum care in 1966, a projection of the personnel needed in U.S. hospitals by 1975 showed that the increase in the number of occupational therapists and social workers, though small in number, represented a doubling of personnel over the nine year period. Last year a total of fifty-two students graduated in social work from the University and Mary College. The University of North Dakota plans to expand its program.[6]

Eighteen occupational therapy students graduated last year, all from the University of North Dakota. In addition, thirty-three students are presently training to be occupational therapy assistants at North Dakota State School of Science.[6] This is the only program in the state providing assistants in a field where the projected need for 1975 is expected to be twice that present in 1966.[5]

North Dakota programs could perhaps re-examine their goals in training speech pathologists and audiologists, one area where the projected 1975 need is expected to be only slightly greater than that existing in 1966.[5] Two of the three programs in the state, from which 85 students graduated last year, plan to expand.[6]

There are no training programs in medical records in North Dakota. No state need has been described[7] and the number of these workers needed nationally by 1975 does not seem sufficient to warrant starting new programs.[5]

One final word, it would seem that health manpower planners must become more adept at the process of establishing needs before they launch further new programs. Ongoing programs also need to be reevaluated in light of changing health needs and employment opportunities.

U.N.D. SCHOOL OF BASIC MEDICAL SCIENCES

History of the Schools of Basic Medical Sciences

The University of North Dakota School of Medicine was established in 1905, one of 10 medical schools in the period 1900 to 1915 either to organize or to reduce its curriculum to become a two year school. Underlying the trend to establish two year schools was the premise that basic science, but not clinical facilities, limit student output by the degree granting schools.

In 1940 there were still 10 two year schools of medicine; by 1966, however, 7 schools had expanded from two-year to four-year programs. The two year schools continuing beyond 1966 were North Dakota, South Dakota, and Dartmouth. Since that time Dartmouth has become a degree granting institution and five new two-year schools have been added. Four of these five schools (Nevada is the exception) have specific plans to develop into degree granting institutions as quickly as conditions allow.[8]

As recently as 1957 a report to the Association of American Medical Colleges stated that 400 additional third year seats were available in degree granting medical schools.[9] On this basis a 1958 report [10] even suggested that 10 new two-year schools with an average class size of 43 students were needed. In sharp contrast twelve years later is the Carnegie Commission recommendation that two-year medical schools either expand into degree granting institutions or cease operation.[11]

U.N.D. Graduates

In 1909 the first class, consisting of one student, was graduated from UND. Through the 1920's the school graduated approximately 25 students per year. The school has continued to grow so that in recent years graduating classes have averaged over 50 students.

The contributions to the physician force of the state made by the UND Medical School are undeniable. Approximately 25% of its graduates are in medical practice in North Dakota, comprising a significant percentage of the state's total physician population.

To date the 197 graduates who have returned to North Dakota to practice medicine represent 36.7% of the total number of physicians in the state. Of the 203 general practitioners in the state 103 physicians, or 50.7% of these general practitioners, are UND graduates.[12]

U.N.D. Students

In 1971 the state of North Dakota had the highest percentage of applicants per population accepted into a first year medical school class. Of the 76 students from the state who applied for admission into medical schools across the nation 51 applicants (or 67.1%) were accepted into medical school.[13] Of these 51 students 46 attend UND School of Medicine.

Scores on the Medical College Aptitude Test (MCAT) are one measure of comparison between first year medical students at UND and first year medical students across the nation. In the following table the scores for the last two UND entering classes[14] are compared to the scores of all accepted and all non-accepted students applying to U.S. medical schools.[13]

MCAT Scores

		Verbal	Quantitative	General	Science
1970-71	accepted nationally	559	606	560	558
	accepted at UND	512	595	533	572
	non-accepted nationally	506	539	518	499
1969-70	accepted nationally	562	603	569	577
	accepted UND	490	570	520	540
	non-accepted nationally	506	536	524	507

On this test, given before entrance into medical school, UND students score slightly lower than the national scores of other accepted students. However, it is significant to note that following completion of the two year curriculum at UND each of these students has successfully transferred to a degree granting medical school.

Over the past eight years 359 North Dakota students have entered medical school. Of these students 312 have entered UND while only 47 students over the 8 year period have entered a medical school outside North Dakota.[15]

A questionnaire distributed in January 1972 to the present two classes of medical students at UND brought the following responses:

66% of the students felt they would not be in medical school if North Dakota had not at least a 2 year program.

21% of the students replied they planned to return to North Dakota to practice after graduation. 18% of the students responded they did not plan to return to the state, while 60% were still undecided.

37% of the students felt that attending the medical school (2 year) had influenced their decision to practice in North Dakota after graduation, while 63% felt attendance had not affected their decision.

In 1969-70 UND Medical School received a total of 150 applications for acceptance into the first year class. In 1970 the total dropped to 138 applications for the 52 seats in the first year class. This represents a ratio of 2.6 applicants for each first year seat. The national average for the same year was 13.3 applicants per first year position.[13]

At the writing of this report UND is receiving a record number of applications for the 63 first year seats in the class to begin in Fall 1972. A total of 450 applications have been received to date: 123 from North Dakota young people and 227 from out of state.[12] UND accepts very few non-resident students and priority is given to those states which have no medical school.

Transferability

Past and Present

Upon successful completion of the sophomore year at UND students transfer to the degree granting institution of their choice. The present curriculum, recently revised, is compatible with that of many degree granting institutions. To date no student has failed to secure a place in a third year class. However, in recent years transfer has been accomplished with increasing difficulty.

Last year each of UND's 56 graduating students successfully competed for one of the 295 third year seats available to transferring students. (This figure excludes students transferring from one degree granting medical school to another.) Of these 295 seats, 169 were filled by students transferring from two year medical schools; 108 by students transferring from foreign schools; and 18 by students transferring from other degree programs. In just the past three years the number of transferring students from foreign schools has increased from 20 to 108, thus intensifying competition for these few seats at an astonishing rate.[17]

Transferability

Future

In November 1971 the UND School of Medicine wrote to the 45 schools which have in recent years accepted UND graduates asking these schools to indicate their ability to accept UND transfer students after 1975. Of the 37 schools which have in the last five years accepted 70% of UND's transferring medical students 22 schools now indicate foreseeable difficulty in accepting these students after 1975.

An obstacle predicted by the responding schools was future incompatibilities in curriculum. Brought about by early introduction of clinical material and by accelerated curricular programs these incompatibilities, however, accounted for only 18% of the projected transferring problems. As cited by 18 of the schools which traditionally receive UND graduates, 82% of the anticipated difficulty is due to lack of space within the class. This is due to the low attrition rate for students in medical school. (For the year 1970-71 the percentage of students withdrawing from medical school was 1.04%).[17]

Costs of Operation

The UND Medical School operated last year on a budget of $1,763,000.[18] The cost of operating the medical school reflects expenses borne by the school in teaching a total of 769 students (381 full time equivalents) per year. This figure includes not only medical students, but also undergraduate and graduate students in the bio-medical sciences, students in physical therapy, occupational therapy, medical technology, cytotechnology and nursing.

Following is a table of operating expenditures for degree granting medical schools over the past two years. In 1969-70 the three schools operating on the lowest budgets in the nation each spent between $3.5 and $5 million. The median expenditure for all degree granting schools for 1969-70 was $14.5 million.[17]

Table 34.—Total Expenditures

	1968-69	%	1969-70	%
No. of fully activated 4 year colleges	85	100	87	100
No. spending between $2 million and $5 million	6	7	3	4
No. spending between $5 million and $10 million	21	25	20	23
No. spending between $10 million and $15 million	22	26	22	25
No. spending between $15 million and $20 million	13	14	14	16
No. spending between $20 million and $25 million	9	11	13	15
No. spending between $25 million and $30 million	5	6	2	2
No. spending over $30 million	9	11	13	15
Minimum amount spent	$ 2,894,768		$ 3,531 000	
Maximum amount spent	53,405,115		56,464,081	
Median expenditures	13,022,333		14,490,871	
Average expenditures	15,758,411		17,418,559	

Sources of Funds

Past and Present

Last year the State of North Dakota provided $920,000 (52% of the Medical School's budget) while the federal government contributed $843,000 (40%) of which $435,000 was designated for research. (Because of new priorities on the national level which favor support of education it may be expected that the amount of federal funds for research will be lower in future years.) Foundations and other sources contributed $129,000 (8%) of the medical school's operating budget last year.[18]

The smaller the medical school the less competitive it is for other than state monies. This has been true especially of the two year schools. At present the State of North Dakota provides approximately 52% of the medical school's financial support. South Dakota reports state support in excess of 76%[19] while state support at the University of Alabama is 15.2%. A strong tradition underlies North Dakota support of the medical school; a 1971 study ranked the state 13th in the nation in state expenditures for higher education.[20]

MEDICAL RESOURCES IN NORTH DAKOTA

Physician Audit

On November 29, 1971, a questionnaire was sent to the 648 physicians presently practicing in the state asking if they would be interested in teaching medical students providing released time for preparation and compensation for effort were available.

To date 387 physicians in the state have returned the questionnaire. Of that number, 345 (or 89% of those responding) have expressed an interest in teaching medical students. The major reason noted by the 42 physicians not indicating an interest in teaching at this time was approaching retirement.

The total of 345 physicians interested in teaching medical school represents 317 private physicians (or 59% of the private physicians in the state) plus an additional 28 physicians in the military, V.A., and the Indian Service who have expressed an interest.

In the cities of Fargo, Bismarck, Grand Forks, and Minot the interest in teaching averages 65% of the physician population while 49% of the physicians practicing in all other areas of the state expressed their interest.

Of the total physicians responding positively, 294 physicians (85%) would be interested in teaching both undergraduates and residents and interns. A total of 39 physicians (11%) expressed a preference for teaching undergraduates, while 12 physicians (3%) preferred teaching residents and interns.[21]

Clinical Audit

For a variety of reasons there is no established criteria for determining the optimum ratio of patients to medical students or the numbers and kinds of experiences required to assure adequate exposure for a sound learning situation. One of the major questions in North Dakota has been whether or not there exists an adequate patient pool in terms of numbers and variety to offer a degree granting experience. What we have attempted to do, therefore, is to identify how many and what kind of patients are presently being seen in North Dakota and to compare that by category with a number of degree granting schools.

It should be emphasized that in no way will our conclusions infer that the physicians within the state are interested or willing at this point to permit exposure of their patients for the purposes of training medical students.

Nevertheless, we are comfortable with the fact that adequate patient material does exist should the medical community provide access and should the medical school expand and develop a plan to take advantage of it.[22]

Hospital Bed Audit

A commonly quoted standard of the number of hospital beds required for teaching is ten beds per student per entering class. By this standard a medical school with a class of 50 students would require a 500-bed hospital. Many medical schools operate their own teaching hospitals with fewer beds than this standard calls for.[23] In actual fact, of schools recently building university hospitals the range of beds per entering student is 2.7 to 6.3 (average 4.5).[24] In all but rare instances affiliations with a variety of neighboring hospitals, particularly Veterans' Administration hospitals, increase the amount of readily available clinical material. In addition, outpatient clinic teaching continues to grow in importance.

Following is the hospital bed capacity in North Dakota's four largest cities:[25]

Fargo	
St. Luke's	364 beds
St. John's	134 beds
Dakota	116 beds
	614 beds

Minot	
St. Joseph's	189 beds
Trinity	270 beds
	459 beds
Bismarck	
St. Alexius	258 beds
Bismarck Hospital	187 beds
	445 beds
Grand Forks	
United - St. Michael's	167 beds
United - Deaconess	151 beds
	318 beds

Other facilities that could be made available are: community hospitals in other cities, Veterans' Administration Hospital, and Air Force Base Hospitals.

Lacking a concrete proposal, it was deemed inappropriate at this point in the study to contact hospital administrators regarding their interest in becoming a teaching hospital.

ALTERNATIVES FOR ACTION

North Dakota has available to it a number of alternatives for future action to provide for physician education. A number were considered and discarded as impractical. Any final course of action must be considered in the light of resources available and priorities established for the best use of resources. The medical profession, educational authorities, legislative and government officials, and the general public share responsibility for a decision which will be in the best interest of the entire state.

The Council of the North Dakota Medical Association requested the study group to present for its consideration the following alternative proposals.

Cease Operation of the Medical School

The cessation of the medical school would result in immediate financial gain for the state, but such a gain would be offset by the expense of starting a new medical school at a future date, should the state deem it appropriate. (Start-up costs prior to the admission of the first medical student average $1.5 million.)[24] Basic to the consideration of any financial gain is the effect discontinuance of the school would have on North Dakota residents, the state, and the University itself.

North Dakota residents have a high rate of acceptance into medical schools, a situation which could change should the medical school close. During 1970-71 a total of 53 North Dakota residents attended medical school as first year students; 45 of these students attended UND. Of the states having no medical school following are the number of residents enrolled in a first year medical class in 1970-71: Alaska 5 students; Delaware 28 students; Idaho 23 students; Maine 19 students; Montana 26 students; Nevada 14 students; and Wyoming 17 students.

For the states having no medical school the above figures expressed as first year medical students per 100,000 population would appear as follows: Alaska 1.7; Delaware 5.1; Idaho 3.2; Maine 1.9; Montana 3.7; Nevada 2.9; and Wyoming 5.2. These figures contrast significantly with North Dakota's present 8.6 first year medical students per 100,000 population.

Cessation of the medical school would certainly affect the economy of the state. The medical school has become a basic industry in the state, affecting employment opportunities and significantly influencing the influx of federal monies into the state.

The effect on the University community would be equally great if the medical school closed. Because the medical school serves as a resource to the bio-science, nursing, and allied health programs its loss could have a detrimental effect on the University's total science program including graduate education. Its absence would greatly affect the quality of these programs and could make it difficult to attract new faculty to these departments. In addition, the loss of the medical school might decrease the morale, stature, and confidence of the University.

Contractual Relationship With Degree Granting School(s)

There are a number of different ways in which an arrangement could be established where a degree granting medical school would agree to accept North Dakota students for all or part of their education.

One possibility is to continue as a two year school and enter into an agreement--either financial or non-financial--with one or more degree granting medical schools securing entrance of North Dakota students into their third year class. The length of such an agreement would have to be set, and would involve maintaining a lower division curriculum compatible with those of the other schools.

A modification of this third-year arrangement would be to establish a contractual arrangement with other schools on a selective basis for some aspects of the students' clinical training or for a portion of the class with specialist aspirations in research or other areas.

Such agreements would guarantee North Dakota students the opportunity of transfer and, initially, would be less expensive. The state would be "renting" instead of "buying" and as a result could eventually see less medical care return for the dollars invested. The medical school itself possibly could lose Federal funds since recent legislation favors degree granting schools to the exclusion of the two year schools.

It may also be difficult to find a degree granting medical school willing to enter into a long-term agreement to accept North Dakota transfers. Because of the increase in the number of students entering medical schools and the decrease in attrition rates, there will simply be fewer openings for transfer students. A 1971 survey by the University of North Dakota Medical School showed that a majority of the schools which now accept North Dakota transfers will be unable to do so after 1975, for reasons of space rather than curriculum compatibility.[14]

Medical Schools willing to cooperate might not offer the kinds of emphases North Dakota might desire, or might be located significantly distant from the Upper Midwest region. Since many students form strong attractions to the area in which they finish medical school, North Dakota could potentially lose even more than the meager ratio of physicians it presently retains by requiring students to train in other regions.

A contractual arrangement for four years of medical schooling is also a possibility should North Dakota decide to discontinue its medical school. The only real advantage to such a plan would be that more North Dakota residents probably would be accepted into medical school than if no arrangements were made. The same problems of finance, space and location involved in the third-year arrangement would be present in this plan.

Develop a Degree Granting Program in Cooperation With Other States

A degree granting medical school developed in cooeration with other states would have a broader population base from which to draw potentially more students, more patients and more financial support.

Before such a school could be developed questions of jurisdiction and location would have to be answered and the problem of transferring funds across state lines solved. Lengthy negotiations would be necessary to iron out these political difficulties at a time when the federal government is urging and supporting immediate conversion to degree granting institutions. The loss of pride and identity a state feels when it no longer has its own medical school must also be considered.

There has been little favorable response from Minneosta or South Dakota to the idea of developing a medical school in cooperation with North Dakota. Several western states were willing to organize interstate health committees to study health manpower problems, but they have been slow to initiate interstate health manpower training programs primarily because of the nature of physician education, namely, clinical training.

Maintain the Status Quo

North Dakota could continue its two-year basic science medical school as at present, presuming that students would be accepted into the third year class at the medical schools to which they apply and informing the students of the risk they are taking. In order to assure students the opportunity of transfer, the medical school should commit itself to conducting frequent surveys of third-year openings at degree granting institutions.

The state would be educating the same number of students as it is now, with little turmoil or interference. It could, however, lose a unique opportunity to expand by failing to take advantage of federal monies now available for expansion.

Because federal funding incentives favor the degree granting medical schools, in the future two-year schools may find it difficult to retain and replace faculty with good quality teachers and physicians for clinical requirements.

Develop a Degree Granting Medical School in North Dakota

North Dakota might benefit from a degree granting school in a number of ways. By accounting for all four years of students' medical education, such an institution potentially could increase the number of physicians in the state. It should keep North Dakota residents' rate of acceptance into medical school high and eliminate the problem of transfer.

The economy of the state could benefit through the addition of federal monies now available for medical school expansion and physician training. The prestige usually enjoyed by a degree granting medical school and its faculty would also be present.

North Dakota would have the option of developing either a three or four year program. The comparative merits of each are as yet unknown. A student in the four year program attends school 36 out of 45 months with the traditional summer vacations. A student in the three year program attends school 33 out of 36 months in a more continuous program. Contrary to what may be assumed, we have not seen an advantage in terms of cost as relates to the three year school. No doubt this has to do with the fact that comparable experiences and services are provided regardless of the time period.

The four year medical school has become an established and accepted program in medical education. The relaxed pace of the program gives the student an opportunity for more elective study and the chance to earn tuition money during the summer vacation while having the advantage of another year to mature.

Although the three year program is basically untried, the national trend is in that direction. Capitation allowances for initiating the three year course are greater than those for the four year course since the shorter program provides initial increased physician output. Conversion to a three year school, however, would require more severe curricular changes than were the school to elect the traditional four year program.

OPPORTUNITIES FOR FUNDING

Federal Funds

In the closing weeks of 1971 President Nixon signed into law the Comprehensive Health Training Act which makes available to medical schools large amounts of federal funds.[26] Among the provisions is one encouraging conversion of two year schools of basic sciences to degree granting medical schools. This provision provides for a grant to a two year school equal to $50,000 times the number of medical students to be enrolled in its initial third year class if the two year school establishes a degree granting program. To be eligible for this grant the school must enroll a third class no later than the school year beginning in 1975.

The basic capitation grant provides that each three or four year school could receive $2,500 for each full time student enrolled in the first, second or third year of a program, thus making available up to $7,500 per student over the first three years of education. In addition, in the year of graduation

$4,000 is available to the school for each student graduating in more than 3 years with the incentive that $6,000 is available for each student graduating in 3 years. A three year school over the period of a student's education, in other words, can receive $13,500 per student while a four year school can receive $2,000 less. Capitation grant material--regulations and applications--lead the list of priorities at the Bureau of Health Manpower Education.[27]

Special consideration would be given to those applicants developing schools of medicine which use existing facilities.

The Comprehensive Health Training Act also provides an authorization to hospitals for training of family physicians. Any public or nonprofit private hospital may apply for a family medicine training grant. This provision would make hospital participation in possible medical school expansion financially advantageous.

Veteran's Administration

Presently 82 medical schools in the nation maintain affiliations with 96 VA hospitals. Figures indicate that about one-half of all physicains entering practice each year receive some of their training at a VA hospital.

Introduced into this session of Congress was a bill which would have enabled the leasing, cost free, to a college or university, of VA hospitals and other facilities or remodeling to make them suitable for educational purposes. The bill also provided for a percentage of faculty salary reimbursement. Although defeated in this session, the VA's interest in medical education is evidenced by this legislation and might well be kept in mind in the event funding is made available in the future.[28]

National Academy of Sciences

The Institute of Medicine of the National Academy of Sciences is looking at the educational process in health professional schools in an attempt to integrate health workers into a health delivery team. Funds may soon be available to solidify a developing idea now taking hold at some schools: no longer should schools separately train physicians, nurses, physicians assistants, nutritionists, and others, but rather these professionals should be trained as a team which would be concerned with the total health of community residents.[29]

Private Foundations

There are additional sources of outside funds for the development of innovative programs. The Commonwealth Foundation, the Hill Foundation, the Kellogg Foundation, and the Brunner Foundation have supported expansion and development of health care patterns for many years. The Johnson Foundation, only now being set up, will be the second largest foundation in the country. The purpose of the foundation is improvement of delivery patterns of health care.

ELABORATION OF FOUR ALTERNATIVES

Following presentation of the varicus alternatives for action the Study Group was directed to develop further information on four of the alternatives. The assignment entailed:

(1) Establishing principles upon which a degree granting medical school in North Dakota would be founded and estimating the cost;

(2) Examining the effect of cessation of the medical school;

(3) Surveying with degree granting medical schools the possibility of a contractual relationship; and

(4) Approaching leaders in neighboring states regarding the possibility of regional cooperation.

The ensuing sections cover these alternatives in greater depth.

PRINCIPLES UPON WHICH EXPANSION WOULD BE BASED ESTIMATED COST

The reader should keep in mind that what is presented is at best an attempt to respond to the question of what might be done. It must be assumed that in order to become a degree granting institution the following must prevail:

(1) That the Board of Higher Education will authorize the medical school expansion to a degree granting institution.

(2) That the state legislature will appropriate the necessary funds for expansion.

(3) That the expansion will take place within existing clinical and hospital facilities.

(4) That the faculty has the capability of developing the necessary academic and clinical experiences to satisfy AAMC accreditation.

(5) That the primary role of the medical school will be to train family physicians.

(6) That the basic support services-- library and laboratories-- need merely to be augmented.

(7) That there is adequate classroom space and that the basic sciences would continue to be taught on the UND campus.

(8) That federal funding--which amounts to an average of 48% of all medical school budgets--will be available to North Dakota.

(9) That the school of medicine currently employs a large enough basic science faculty to provide service for the expansion without employing additional faculty.

(10) That because the plan does not intend to operate a university hospital the school's clinical staff would become a viable part of the existing health care system providing released time for interested practitioners to take part.

(11) That advanced instruction in limited specialty fields not be a part of undergraduate training.

(12) That with proper supervision and assistance community hospitals and practicing physicians can provide quality instruction.

(13) That any consideration for expansion will include post doctorate training in the form of residencies and as a general principle they should begin one or two years before the development of clinical teaching.

(14) That the majority of the clinical training would take place in larger towns, namely Fargo, Minot, Bismarck, and Grand Forks.

Rationale

The budget we have prepared is based on national average ratios of faculty to students, the examination of existing medical school budgets, and the 14 assumptions listed above. Recognize that any manipulation of these variables should be accompanied by a change in rationale and figures.

Accurate cost figures are not possible at this phase of the study. Costs will vary according to type of program selected, physician and hospital donation of resources and facilities, etc.

The clinical budget represents full time equivalents which may be divided in a variety of ways. The funds allocated could be used to pay practicing physicians who would teach medical students part time in their communities.

The starting salary for associate professors in clinical medicine has been set at $35,000. An additional $5,000 was added to all but the "Other" category to allow for the appointment of department chairman. These figures are consistent with national averages. Both the clinical and basic science faculty estimates are based on the establishment of a four year program enrolling 240 students.

Regardless of whether a three year or a four year program is selected by the medical school it is not likely, because of recruitment of staff, restructuring of the undergraduate experience, and designing of the clinical experience, that any program would be operational before 1975.

Basic Sciences	Salaries	Travel	Employee Benefits	Number	Supplies and Materials	TOTALS
Anatomy	145,000	5,250	14,500	7	14,000	178,750
Pathology	145,000	5,250	14,500	7	14,000	178,750
Physiology-Pharmacology	205,000	7,500	20,500	10	20,000	253,000
Microbiology	165,000	6,000	16,500	8	16,000	203,500
Biochemistry	165,000	6,000	16,500	8	16,000	203,500
Lab. Animal Service	50,000		5,000			55,000
Support Services	150,000		20,000	40		170,000
				Basic Sciences--Subtotal		1,242,500

Administration	Salaries	Travel	Employee Benefits	Number	Supplies and Materials	TOTALS
Dean	40,000	5,000	4,000	1	2,000	51,000
Assoc. Dean Curriculum	35,000	3,000	3,500	1	2,000	43,500
Assoc. Dean Admissions	35,000	3,000	3,500	1	2,000	43,500
Assoc. Dean Clinic	35,000	3,000	3,500	1	2,000	43,500
Finance Officer	17,500	1,500	1,750	1	2,000	22,750
Director(s) of Medical Education	175,000	15,000	17,500	5	10,000	217,500
Support Services	36,000		3,600	6		39,600
				Administration--Subtotal		461,350

Library	Salaries	Travel	Employee Benefits	Number	Supplies and Materials	TOTALS
Librarian	17,500	3,000	1,750	1	10,000	32,250
Asst. Librarian	10,000		1,000	2		11,000
Support Services	6,000		600			6,600
				Library--Subtotal		49,850

Research	Salaries	Travel	Employee Benefits	Number	Supplies and Materials	TOTALS
					100,000	100,000
				Research--Subtotal		100,000

Clinical Sciences	Salaries	Travel	Employee Benefits	Number	Supplies and Materials	TOTALS
Family physicians	355,000	15,000	35,000	10	20,000	425,500
Pediatrics	285,000	12,000	28,500	8	16,000	341,500
Medicine	355,000	15,000	35,500	10	20,000	425,500
Surgery	285,000	12,000	28,500	8	16,000	341,500
Ob-Gyn	145,000	6,000	14,500	4	8,000	173,500
Psychiatry	145,000	6,000	14,500	4	8,000	173,500
Anesthesiology	75,000	3,000	7,500	2	4,000	89,500
Community medicine	180,000	7,500	18,000	5	10,000	215,500
Radiology	110,000	4,500	11,000	3	6,000	131,500
Other--Derm, Opth, ENT, Neurology, etc.	210,000	9,000	21,000	6	12,000	252,000
Support Staff (clinical, lab, nurses, technicians)	180,000		18,000			198,000

Clinical Sciences--Subtotal 2,767,500

	Salaries	Travel	Employee Benefits	Number	Supplies and Materials	TOTALS
TOTALS	3,757,000	153,500	380,700	159	330,000	4,621,200
			Contingency fund @ 7%			323,484
				GRAND TOTAL		4,994,684

Effect of Cessation of the Medical School

Facilities

Over the years UND has built up an investment in facilities and equipment in the medical science building and the Ireland Research Laboratory valued at $5.8 million.[29] These are special purpose facilities which would continue to be adequate for use by the medical school, but would be costly to adapt for other purposes.

Faculty

What cannot be so easily reallocated is the expertise in the form of faculty which exists here. Concern should develop over what will become of the total bio-medical science faculty should the medical school be discontinued. It is true that in addition to medical students the faculty prepares undergraduates and graduate students in bio-medical sciences, however, the primary motivation to the majority of faculty members in coming to UND was the opportunity to teach medical students. Were the medical school to close it is conceivable that many faculty members would want to relocate. The 25 faculty members who have tenure would have to be reassigned. Those 16 faculty members not on tenure could conceivably be reassigend or be released.

Students

The primary reason for the existence of the medical school has been to provide educational opportunity for students in North Dakota. Should it close, our students would have to cast their lot with the rest of the nation. From what we have been able to determine they would be at a disadvantage. Our studies have indicated it is very unlikely North Dakota students will be admitted into medical schools outside of North Dakota. We know from our study that by and large those states who do not enjoy a medical school have a difficult job getting their students into medical school. At present, only an average of 5 or 6 North Dakota students per year enter a medical school outside the state while more than 40 North Dakota young people per year begin their medical education at UND.[15]

Finances

From a financial point of view by closing the medical school the people of North Dakota would gain by not having to increase their expenses. However, they would also lose an undertermined amount of money (last year $843,000) from outside sources. For every dollar North Dakota spends on medical education 92 cents has been matched in contracts from the federal government and agencies elsewhere. Without a medical school North Dakota would not be eligible for such federal grants and subsidies.

Entering into a Contract with a Degree Granting Medical School(s)

On February 2, 1972 a letter was sent to all 101 degree granting medical schools in the United States inquiring whether or not they would be interested in the possibility of entering into a contractual agreement with us.

To date 71 schools (72%) have returned the questionnaire, in many cases taking time to enclose explanatory letters with the post card. Often the idea of entering into a contract with North Dakota was discussed with several members of a medical school's administration before a reply was sent.

Of the schools responding, 19 (19%) said they were definitely interested in the possibility of a contract with North Dakota to educate a student at their institution at North Dakota's expense. Two other schools (the University of Iowa and the University of Oklahoma) were unable to give a definite answer at this time, but did not rule out the possibility at a later date.

The number of students individual schools would be willing to accept ranged from one to twenty, with an average of about ten. The estimated cost per student ranged from $5,000 to $30,000, with most estimates falling into the $10,000-$15,000 range.

Six schools in the Midwest expressed interest in a contractual arrangement. They listed the following figures for number of students they could accept and the estimated cost per student:

School	Students	Estimated Cost per Student
University of Nebraska	10	$ 5,000
Creighton University	10-20	$ 5,000
University of Wisconsin	3	To be decided later
University of Illinois	20	To be decided later
University of Michigan	1-5	$20,000-$30,000

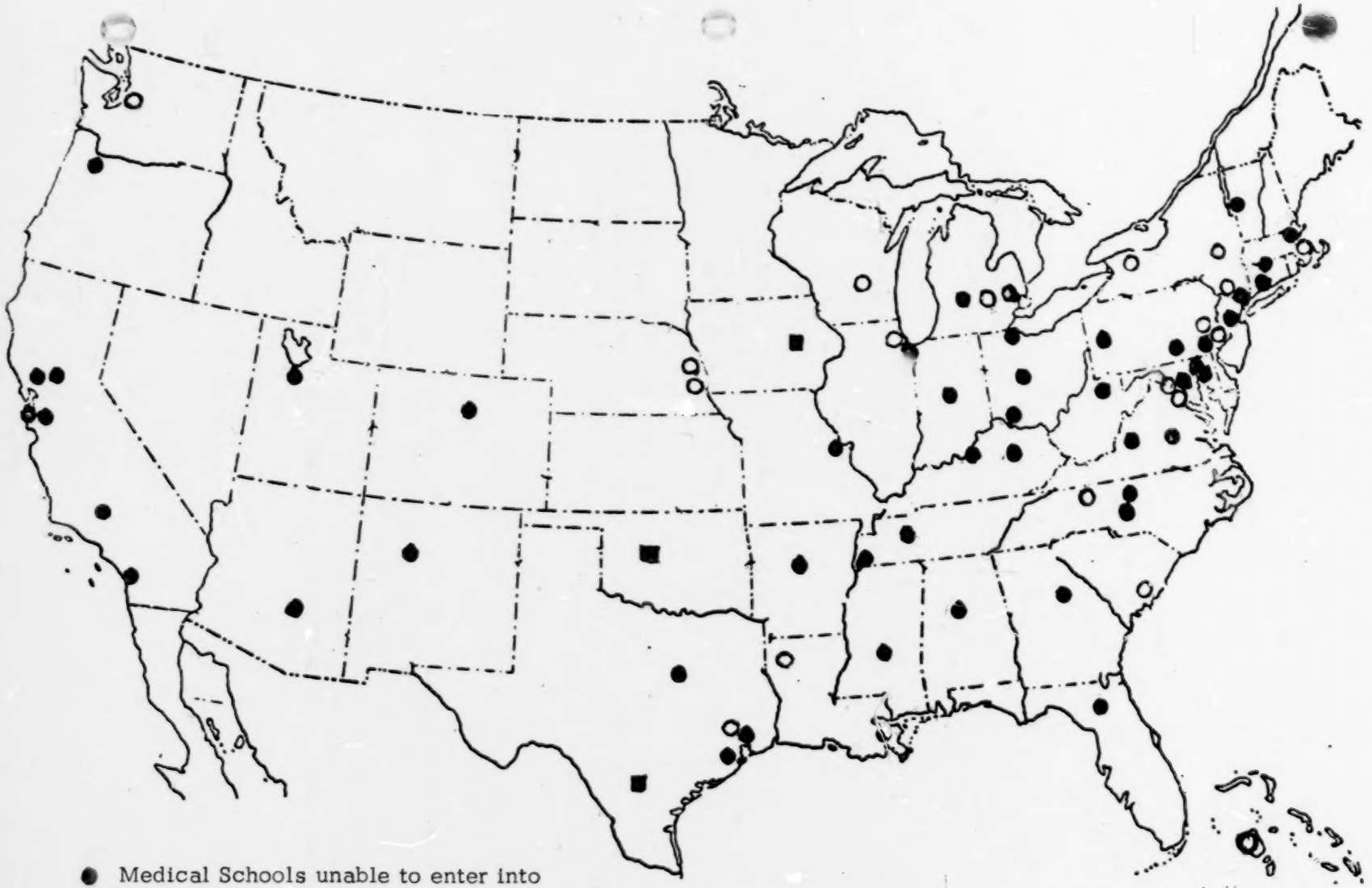
Many schools which said they would be unable to enter into a contractual arrangement made it clear that they are still willing to consider North Dakota students on an individual basis. The lack of clinical facilities caused by increased enrollment and low attrition rates usually was cited as the main reason a school was unable to consider a contract with North Dakota.

Responses indicated that no schools were able at this time to clearly indicate an ability to enter into a firm contract for a specific number of students at a specific cost figure. Any type of contracting would require prolonged negotiations with a number of institutions.

Regional Cooperation in Developing a Medical School

Regional cooperation, in theory, is a very exciting concept. Attempts have been made, but to date full implementation has never been realized.

WAMI (which takes it name from the first letter of the four participating states--Washington, Alaska, Montana, and Idaho) is a program to increase the capacity of the University of Washington School of Medicine by letting students take two quarters of basic science courses at a university within their own state. It will also expose students to outstanding private practices in rural areas. The funding for WAMI by Commonwealth Foundation provides an initial $1/2 million for a 5 year feasibility study. We will not know the future of the concept until the program evaluation at the end of the 5 years.[31]



● Medical Schools unable to enter into contractual arrangement

O Medical Schools willing to consider possibility of contractual arrangement

■ Medical Schools responding, but unable to give definite answer at this time

WICHE (Western Interstate Commission for Higher Education) is now considering a plan to develop a regionalized medical school in the states of Montana, Idaho, and Wyoming. The idea assumes that each state would develop a school of medicine which would ally itself with a selection of community hospitals. A director of medical education would be necessary in each of these hospitals. The plan is still in the developmental phase.[32]

The Director of the study made an appointment and flew to Pierre to meet with two South Dakota legislators regarding the possibility of cooperation between North and South Dakota. Little interest in such an arrangement was shown by the South Dakota representatives.

We are in contact with the people in Montana. Our preliminary response from them has been one of interested indifference. We are at the present time making arrangements for a meeting in Montana. At the writing of this report we have been unable to do so.

Our conclusion is not that regional cooperation couldn't be done or shouldn't be done, but just that the people involved are unable to grasp all of the factors of the concept in order to implement a plan.

Conclusion

The future of the medical school will be decided by the physicians of the state at the annual convention of the State Medical Society in May. No doubt the reader will recognize that regardless of the position taken by the State Medical Society the final authority rests with the legislature.

The state legislature must recognize that at the present time it is inconceivable that North Dakota could move toward a degree granting institution without the cooperation and support of the practicing medical community. This cooperation must include their:

1. Interest in teaching medical students,
2. Willingness to allow the medical school the use of their facilities, and
3. Granting access to patient material.

From its inception the mandate of this study has been to consider expansion of the medical school within existing resources--personnel, clinics, hospitals, etc. It is anticipated that any program recommended by the North Dakota Medical Association or one adopted by the Legislature using the information contained will recognize this fact. Consideration of any other approach would require the development of other basic information.

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